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# United States Patent [19]

## Satarasinghe

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[54] **METHOD FOR HARD HANDOFF IN A CDMA CELLULAR ENVIRONMENT**

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[\*] **Notice:** This patent issued on a continued prosecution application filed under 37 CFR 1.53(d), and is subject to the twenty year patent term provisions of 35 U.S.C. 154(a)(2).

Holeman et al: "CDMA Intersystem Operations" Proceedings of the Vehicular Technology Conference, Stockholm, Jun. 8-10, 1994, vol. 1, Conf. 44, pp. 590-594, Institute of Electrical and Electronics Engineers.

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[57] **ABSTRACT**

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[51] **Int. Cl.<sup>7</sup>** ..... **H04Q 7/22**

[52] **U.S. Cl.** ..... **455/436; 455/438; 455/443**

[58] **Field of Search** ..... 370/331, 332, 370/333; 455/436, 438, 439, 443, 448, 445, 553, 440, 442

A method for performing a hard handoff of a call from a first cell site of a CDMA cellular network to a target cell site of a second cellular network, such as an AMPS network or a second CDMA network. As a mobile unit operating in the first CDMA network moves toward the second cellular network, the first cell site uses two separate RTD thresholds for comparison with a measured RTD distance between the mobile unit and the first cell site. Handoff is initiated when the RTD distance exceeds the first RTD threshold and is completed when the RTD distance exceeds the second RTD threshold. If the first cell site is not co-located with a cell site of the second network, the first cell site utilizes receivers placed in the target cell site for handoff. If the first cell site is co-located with a second cell site of the second network, the second cell site of the second network is always the target cell site.

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**21 Claims, 6 Drawing Sheets**

